

REMARKS

This is responsive to the Office Action mailed August 23, 2005. In the Office Action, claims 1-32 were rejected. Claims 1-27 and 31, 32 have been amended to address certain informalities, typing errors and to recite their subject matter more clearly. No new matter has been added. Claims 28-30 have been cancelled. Upon entry of the amendments, claims 1-27 and 31-32 will remain pending. Reconsideration in light of the following remarks is respectfully requested.

Claim Objections

Claims 1, 10, 11-13, 19, 21, 22, 23, and 24 were objected to due to certain informalities. Claims 10, 11-13, 19, 23, and 24 have been amended to correct the same.

Regarding claim 1, the recitation relating to one distributed radiation source substantially surrounding an imaging volume, is adequately described in the detailed description in paragraph 26 and also in paragraphs 27 and 28, and shown diagrammatically in FIG. 2. For example, with reference to FIG. 2, the relevant description in paragraph 26 states the following:

As shown in FIG. 2, in an exemplary implementation, the distributed X-ray source 30 may include a series of electron beam emitters 32 that are coupled to radiation source controller 16 shown in FIG. 1, and are triggered by the source controller during operation of the scanner. The electron beam emitters 32 are positioned proximal to a target 34. Upon triggering by the radiation source controller 16, the electron beam emitters 32 may emit electron beams 36 toward target 34. The target 34, which may, for example, be a tungsten rail or element, emits X-ray radiation, as indicated at reference numeral 38, upon impact of the electron beams thereon.

Thus, by virtue of having a series of electron beam emitters, the source is a distributed source but still it can be a single entity. Applicants believe that there is adequate support for the claim recitation of “one” *distributed* source as explained in the

aforementioned paragraphs. Therefore, Applicants respectfully request the withdrawal of claim objection for claim 1.

Regarding claims 20 and 21, the Examiner pointed out that these seemed to be duplicate claims. Applicants respectfully submit that claim 20 is drawn towards “one or more detectors” and the claim 21 is drawn towards “one or more sections of one or more detectors.” The two claims are therefore distinct in their respective coverage. Therefore, the Applicants request for withdrawal of claim objection for claims 20 and 21 as well.

Rejections under 35 U.S.C. § 112

Claims 1-13 and 19-32 were rejected under 35 U.S.C. § 112, first paragraph, as the Application was said to fail in providing enablement of all types of imaging systems other than a CT imaging system. The Applicants have carefully reviewed the claims and added the recitation of “X-ray source” and “X-ray detector” to all the pending claims in order to more specifically direct them to X-ray systems. Therefore, the Applicants respectfully submit withdrawal of the rejection under 35 U.S.C. § 112.

Rejections under 35 U.S.C. § 102

Claims 1-22 and 25-30 were rejected under 35 U.S.C. §102 (b) as being anticipated by Tschunt (U.S. Patent No. 4,347,624, hereinafter “Tschunt”). Claims 28-30 have been cancelled. The applied reference has been carefully reviewed, and Applicants respectfully traverse the rejection.

Claims 23, 24, 31, and 32 were rejected under 35 U.S.C. §102 (b) as being anticipated by Bagby (U.S. Patent No. 4, 206, 362, hereinafter “Bagby”). The applied reference has been carefully reviewed, and Applicants respectfully traverse the rejection.

A *prima facie* case of anticipation under 35 U.S.C. § 102 requires a showing that each limitation of a claim is found in a single reference, practice or device. *In re Donohue*, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985).

Tschunt fails to teach one or more X-ray detectors that are displaceable transversely and other X-ray detectors that are stationary.

Tschunt discloses an X-ray diagnostic apparatus in which a fan-shaped X-ray beam is “rotated” by electronic switching and a detector ring that is gimbaled so that only the desired sector thereof intercepts the beam (*See*, Abstract). The radiation receiver (detector) is mounted on gimbals and it is acted upon by guide means such that they swivel into the X-ray beam the particular part of the detector which is required for detecting the X-radiation issuing from the radiography subject (*See*, Summary). Further, in Tschunt, when the X-ray beam is rotated, the collimator ring with the collimator is correspondingly rotated at the same time and thus causes the detector to swivel via pins guided in a groove. (*See*, column 4, lines 1-10). Thus Tschunt teaches a slight swiveling movement of the detector ring. For this motion *the entire detector ring would be required to swivel*, as evidenced by the illustrated positioning of the groove and the pins, and as described in more detail in column 3 lines 58-67 of Tschunt.

However, the arrangement of source and detectors as claimed in amended independent claims 1, 10 12, 14, 19, 20, 25 is entirely distinct, as each of these respective claims recite that some X-ray detectors are displaceable transversely and other detectors are stationary. The stationary and movable detectors are shown clearly in the drawings as well. For example, FIG. 7 shows the detector 76 as a movable detector and detector 82 as a stationary detector.

Nowhere does Tschunt teach that at least some of the detectors will remain stationary. As described hereinabove, the detector-collimator arrangement in Tschunt would necessarily require all the detectors to nutate.

Secondly, Tschunt at best merely teaches a nutating motion of the entire detector ring. Tschunt does not disclose, teach or suggest the transverse motion of the detectors as recited in the amended independent claims 1, 10, 12, 14, 19, 20, 25. The transverse motion is also described clearly with reference to drawings, for example FIGS. 5 and 7 in the Applicants' application.

Similarly there is absolutely no disclosure, teaching or suggestion in Tschunt of "detector sections." Tschunt, in column 3, lines 24-28 merely describes the radiation receiver consisting of series of individual detectors. Nowhere does Tschunt disclose, teach or describe detector sections as recited in independent claims 11, 13, 21, and 22, and as illustrated in FIGS. 8 and 9 of the Application.

Thus, Applicants respectfully submit that amended independent claims 1, 10, 11-14, 19-22, and 25, are not anticipated by Tschunt under 35 U.S.C. § 102 and, therefore, are allowable. Amended claims 2-9 depend directly or indirectly from amended independent claim 1, and amended claims 15-18 depend directly from amended independent claim 14. Thus, these dependent claims are similarly allowable.

Bagby fails to teach one or more *distributed* X-ray sources.

Bagby discloses a medical radiographic apparatus for investigating *two* cross-sectional slices of a patient's body. The apparatus as shown in FIG. 1a in Bagby has *two rotating sources*, each projecting a substantially planar fan-shaped distribution of radiation (*See*, Background). Applicants respectfully submit that the distributed X-ray source as recited in amended independent claims 23, 24, 31, and 32 is clearly distinct from the two source arrangement as shown and described in Bagby. Bagby discloses a traditional CT system where the X-ray source is orbited around the patient. In the configuration disclosed in Bagby two X-ray sources are orbited to take two cross-sectional slices. The distributed source arrangement as recited in the amended independent claims 23, 24, 31, and 32, and as described in paragraph 26 of the

application (also shown in FIG. 2) is a next generation CT system configuration where the X-ray source is non-rotating.

Thus, Applicants respectfully submit that amended independent claims 23, 24, 31, and 32 are not anticipated by Bagby under 35 U.S.C. § 102 and, therefore, are allowable.

Summary

In view of the foregoing, Applicants respectfully submit that the application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are respectfully requested. Should the Examiner believe that anything further is needed to place the application in even better condition for allowance, the Examiner is requested to contact Applicant's undersigned representative at the telephone number below.

Respectfully submitted,

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Pg
Patrick S. Yoder
Reg. No. 37,479
FLETCHER YODER
P.O. Box 692289
Houston, TX 77269-2289
(281) 970-4545